RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: _____ 10/559, 825 _____
Source: _____ JFWP _____
Date Processed by STIC: _____ 12/16/2005 _____

ENTERED

RAW SEQUENCE LISTING   DATE: 12/16/2005
PATENT APPLICATION: US/10/559,825   TIME: 15:33:38

Input Set : **A:\Sequence Listing.txt**
Output Set: **N:\CRF4\12162005\J559825.raw**

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  3 <110> APPLICANT: THE GOVERNMENT OF THE UNITED STATES OF AMERICA AS
  4        REPRESENTED BY THE SECRETARY OF THE DEPARTMENT OF HEALTH AND
  5        HUMAN SERVICES
  6        Schneerson, Rachel
  7        Leppla, Stephen H.
  8        Robbins, John B.
  9        Shiloach, Joseph
 10        Kubler-Kielb, Joanna
 11        Liu, Darrell
 12        Majadly, Fathy
 14 <120> TITLE OF INVENTION: GAMMA PGA CONJUGATES FOR ELICITING IMMUNE RESPONSES DIRECTED
 15        AGAINST BACILLI
 17 <130> FILE REFERENCE: 4239-68226-07
 19 <140> CURRENT APPLICATION NUMBER: US/10/559,825
 19 <141> CURRENT FILING DATE: 2005-12-02
 19 <150> PRIOR APPLICATION NUMBER: PCT/US2004/017736
 20 <151> PRIOR FILING DATE: 2004-06-04
 22 <150> PRIOR APPLICATION NUMBER: US 60/476,598
 23 <151> PRIOR FILING DATE: 2003-06-05
 25 <160> NUMBER OF SEQ ID NOS: 3
 27 <170> SOFTWARE: PatentIn version 3.2
 29 <210> SEQ ID NO: 1
 30 <211> LENGTH: 13
 31 <212> TYPE: PRT
 32 <213> ORGANISM: Artificial Sequence
 34 <220> FEATURE:
 35 <223> OTHER INFORMATION: Basic peptide derived from HIV-1 Tat protein.
 37 <400> SEQUENCE: 1
 39 Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln
 40 1               5                   10
 43 <210> SEQ ID NO: 2
 44 <211> LENGTH: 2295
 45 <212> TYPE: DNA
 46 <213> ORGANISM: Bacillus anthracis
 49 <220> FEATURE:
 50 <221> NAME/KEY: CDS
 51 <222> LOCATION: (1)..(2292)
 53 <400> SEQUENCE: 2
 54 atg aaa aaa cga aaa gtg tta ata cca tta atg gca ttg tct acg ata      48
 55 Met Lys Lys Arg Lys Val Leu Ile Pro Leu Met Ala Leu Ser Thr Ile
 56 1               5                   10                  15
 58 tta gtt tca agc aca ggt aat tta gag gtg att cag gca gaa gtt aaa      96
 59 Leu Val Ser Ser Thr Gly Asn Leu Glu Val Ile Gln Ala Glu Val Lys
```

C--> on lines 19 marked at left margin

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60              20                  25                  30
62 cag gag aac cgg tta tta aat gaa tca gaa tca agt tcc cag ggg tta      144
63 Gln Glu Asn Arg Leu Leu Asn Glu Ser Glu Ser Ser Ser Gln Gly Leu
64              35                  40                  45
66 cta gga tac tat ttt agt gat ttg aat ttt caa gca ccc atg gtg gtt      192
67 Leu Gly Tyr Tyr Phe Ser Asp Leu Asn Phe Gln Ala Pro Met Val Val
68      50                  55                  60
70 acc tct tct act aca ggg gat tta tct att cct agt tct gag tta gaa      240
71 Thr Ser Ser Thr Thr Gly Asp Leu Ser Ile Pro Ser Ser Glu Leu Glu
72 65                  70                  75                  80
74 aat att cca tcg gaa aac caa tat ttt caa tct gct att tgg tca gga      288
75 Asn Ile Pro Ser Glu Asn Gln Tyr Phe Gln Ser Ala Ile Trp Ser Gly
76                  85                  90                  95
78 ttt atc aaa gtt aag aag agt gat gaa tat aca ttt gct act tcc gct      336
79 Phe Ile Lys Val Lys Lys Ser Asp Glu Tyr Thr Phe Ala Thr Ser Ala
80                  100                 105                 110
82 gat aat cat gta aca atg tgg gta gat gac caa gaa gtg att aat aaa      384
83 Asp Asn His Val Thr Met Trp Val Asp Asp Gln Glu Val Ile Asn Lys
84          115                 120                 125
86 gct tct aat tct aac aaa atc aga tta gaa aaa gga aga tta tat caa      432
87 Ala Ser Asn Ser Asn Lys Ile Arg Leu Glu Lys Gly Arg Leu Tyr Gln
88      130                 135                 140
90 ata aaa att caa tat caa cga gaa aat cct act gaa aaa gga ttg gat      480
91 Ile Lys Ile Gln Tyr Gln Arg Glu Asn Pro Thr Glu Lys Gly Leu Asp
92 145                 150                 155                 160
94 ttc aag ttg tac tgg acc gat tct caa aat aaa aaa gaa gtg att tct      528
95 Phe Lys Leu Tyr Trp Thr Asp Ser Gln Asn Lys Lys Glu Val Ile Ser
96                  165                 170                 175
98 agt gat aac tta caa ttg cca gaa tta aaa caa aaa tct tcg aac tca      576
99 Ser Asp Asn Leu Gln Leu Pro Glu Leu Lys Gln Lys Ser Ser Asn Ser
100                 180                 185                 190
102 aga aaa aag cga agt aca agt gct gga cct acg gtt cca gac cgt gac     624
103 Arg Lys Lys Arg Ser Thr Ser Ala Gly Pro Thr Val Pro Asp Arg Asp
104             195                 200                 205
106 aat gat gga atc cct gat tca tta gag gta gaa gga tat acg gtt gat     672
107 Asn Asp Gly Ile Pro Asp Ser Leu Glu Val Glu Gly Tyr Thr Val Asp
108     210                 215                 220
110 gtc aaa aat aaa aga act ttt ctt tca cca tgg att tct aat att cat     720
111 Val Lys Asn Lys Arg Thr Phe Leu Ser Pro Trp Ile Ser Asn Ile His
112 225                 230                 235                 240
114 gaa aag aaa gga tta acc aaa tat aaa tca tct cct gaa aaa tgg agc     768
115 Glu Lys Lys Gly Leu Thr Lys Tyr Lys Ser Ser Pro Glu Lys Trp Ser
116                 245                 250                 255
118 acg gct tct gat ccg tac agt gat ttc gaa aag gtt aca gga cgg att     816
119 Thr Ala Ser Asp Pro Tyr Ser Asp Phe Glu Lys Val Thr Gly Arg Ile
120             260                 265                 270
122 gat aag aat gta tca cca gag gca aga cac ccc ctt gtg gca gct tat     864
123 Asp Lys Asn Val Ser Pro Glu Ala Arg His Pro Leu Val Ala Ala Tyr
124             275                 280                 285
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Input Set : **A:\Sequence Listing.txt**
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127 Pro Ile Val His Val Asp Met Glu Asn Ile Ile Leu Ser Lys Asn Glu
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130 gat caa tcc aca cag aat act gat agt caa acg aga aca ata agt aaa      960
131 Asp Gln Ser Thr Gln Asn Thr Asp Ser Gln Thr Arg Thr Ile Ser Lys
132 305                 310                 315                 320
134 aat act tct aca agt agg aca cat act agt gaa gta cat gga aat gca     1008
135 Asn Thr Ser Thr Ser Arg Thr His Thr Ser Glu Val His Gly Asn Ala
136                 325                 330                 335
138 gaa gtg cat gcg tcg ttc ttt gat att ggt ggg agt gta tct gca gga     1056
139 Glu Val His Ala Ser Phe Phe Asp Ile Gly Gly Ser Val Ser Ala Gly
140                 340                 345                 350
142 ttt agt aat tcg aat tca agt acg gtc gca att gat cat tca cta tct     1104
143 Phe Ser Asn Ser Asn Ser Ser Thr Val Ala Ile Asp His Ser Leu Ser
144                 355                 360                 365
146 cta gca ggg gaa aga act tgg gct gaa aca atg ggt tta aat acc gct     1152
147 Leu Ala Gly Glu Arg Thr Trp Ala Glu Thr Met Gly Leu Asn Thr Ala
148     370                 375                 380
150 gat aca gca aga tta aat gcc aat att aga tat gta aat act ggg acg     1200
151 Asp Thr Ala Arg Leu Asn Ala Asn Ile Arg Tyr Val Asn Thr Gly Thr
152 385                 390                 395                 400
154 gct cca atc tac aac gtg tta cca acg act tcg tta gtg tta gga aaa     1248
155 Ala Pro Ile Tyr Asn Val Leu Pro Thr Thr Ser Leu Val Leu Gly Lys
156                 405                 410                 415
158 aat caa aca ctc gcg aca att aaa gct aag gaa aac caa tta agt caa     1296
159 Asn Gln Thr Leu Ala Thr Ile Lys Ala Lys Glu Asn Gln Leu Ser Gln
160                 420                 425                 430
162 ata ctt gca cct aat aat tat tat cct tct aaa aac ttg gcg cca atc     1344
163 Ile Leu Ala Pro Asn Asn Tyr Tyr Pro Ser Lys Asn Leu Ala Pro Ile
164                 435                 440                 445
166 gca tta aat gca caa gac gat ttc agt tct act cca att aca atg aat     1392
167 Ala Leu Asn Ala Gln Asp Asp Phe Ser Ser Thr Pro Ile Thr Met Asn
168     450                 455                 460
170 tac aat caa ttt ctt gag tta gaa aaa acg aaa caa tta aga tta gat     1440
171 Tyr Asn Gln Phe Leu Glu Leu Glu Lys Thr Lys Gln Leu Arg Leu Asp
172 465                 470                 475                 480
174 acg gat caa gta tat ggg aat ata gca aca tac aat ttt gaa aat gga     1488
175 Thr Asp Gln Val Tyr Gly Asn Ile Ala Thr Tyr Asn Phe Glu Asn Gly
176                 485                 490                 495
178 aga gtg agg gtg gat aca ggc tcg aac tgg agt gaa gtg tta ccg caa     1536
179 Arg Val Arg Val Asp Thr Gly Ser Asn Trp Ser Glu Val Leu Pro Gln
180                 500                 505                 510
182 att caa gaa aca act gca cgt atc att ttt aat gga aaa gat tta aat     1584
183 Ile Gln Glu Thr Thr Ala Arg Ile Ile Phe Asn Gly Lys Asp Leu Asn
184                 515                 520                 525
186 ctg gta gaa agg cgg ata gcg gcg gtt aat cct agt gat cca tta gaa     1632
187 Leu Val Glu Arg Arg Ile Ala Ala Val Asn Pro Ser Asp Pro Leu Glu
188     530                 535                 540
190 acg act aaa ccg gat atg aca tta aaa gaa gcc ctt aaa ata gca ttt     1680
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191 Thr Thr Lys Pro Asp Met Thr Leu Lys Glu Ala Leu Lys Ile Ala Phe
192 545             550             555             560
194 gga ttt aac gaa ccg aat gga aac tta caa tat caa ggg aaa gac ata      1728
195 Gly Phe Asn Glu Pro Asn Gly Asn Leu Gln Tyr Gln Gly Lys Asp Ile
196             565             570             575
198 acc gaa ttt gat ttt aat ttc gat caa caa aca tct caa aat atc aag      1776
199 Thr Glu Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln Asn Ile Lys
200             580             585             590
202 aat cag tta gcg gaa tta aac gca act aac ata tat act gta tta gat      1824
203 Asn Gln Leu Ala Glu Leu Asn Ala Thr Asn Ile Tyr Thr Val Leu Asp
204             595             600             605
206 aaa atc aaa tta aat gca aaa atg aat att tta ata aga gat aaa cgt      1872
207 Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg Asp Lys Arg
208     610             615             620
210 ttt cat tat gat aga aat aac ata gca gtt ggg gcg gat gag tca gta      1920
211 Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp Glu Ser Val
212 625             630             635             640
214 gtt aag gag gct cat aga gaa gta att aat tcg tca aca gag gga tta      1968
215 Val Lys Glu Ala His Arg Glu Val Ile Asn Ser Ser Thr Glu Gly Leu
216             645             650             655
218 ttg tta aat att gat aag gat ata aga aaa ata tta tca ggt tat att      2016
219 Leu Leu Asn Ile Asp Lys Asp Ile Arg Lys Ile Leu Ser Gly Tyr Ile
220             660             665             670
222 gta gaa att gaa gat act gaa ggg ctt aaa gaa gtt ata aat gac aga      2064
223 Val Glu Ile Glu Asp Thr Glu Gly Leu Lys Glu Val Ile Asn Asp Arg
224             675             680             685
226 tat gat atg ttg aat att tct agt tta cgg caa gat gga aaa aca ttt      2112
227 Tyr Asp Met Leu Asn Ile Ser Ser Leu Arg Gln Asp Gly Lys Thr Phe
228     690             695             700
230 ata gat ttt aaa aaa tat aat gat aaa tta ccg tta tat ata agt aat      2160
231 Ile Asp Phe Lys Lys Tyr Asn Asp Lys Leu Pro Leu Tyr Ile Ser Asn
232 705             710             715             720
234 ccc aat tat aag gta aat gta tat gct gtt act aaa gaa aac act att      2208
235 Pro Asn Tyr Lys Val Asn Val Tyr Ala Val Thr Lys Glu Asn Thr Ile
236             725             730             735
238 att aat cct agt gag aat ggg gat act agt acc aac ggg atc aag aaa      2256
239 Ile Asn Pro Ser Glu Asn Gly Asp Thr Ser Thr Asn Gly Ile Lys Lys
240             740             745             750
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244             755             760
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248 <211> LENGTH: 764
249 <212> TYPE: PRT
250 <213> ORGANISM: Bacillus anthracis
252 <400> SEQUENCE: 3
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```

```
259             20              25              30
262 Gln Glu Asn Arg Leu Leu Asn Glu Ser Glu Ser Ser Ser Gln Gly Leu
263         35              40              45
266 Leu Gly Tyr Tyr Phe Ser Asp Leu Asn Phe Gln Ala Pro Met Val Val
267     50              55              60
270 Thr Ser Ser Thr Thr Gly Asp Leu Ser Ile Pro Ser Ser Glu Leu Glu
271 65              70              75              80
274 Asn Ile Pro Ser Glu Asn Gln Tyr Phe Gln Ser Ala Ile Trp Ser Gly
275             85              90              95
278 Phe Ile Lys Val Lys Lys Ser Asp Glu Tyr Thr Phe Ala Thr Ser Ala
279         100             105             110
282 Asp Asn His Val Thr Met Trp Val Asp Asp Gln Glu Val Ile Asn Lys
283         115             120             125
286 Ala Ser Asn Ser Asn Lys Ile Arg Leu Glu Lys Gly Arg Leu Tyr Gln
287     130             135             140
290 Ile Lys Ile Gln Tyr Gln Arg Glu Asn Pro Thr Glu Lys Gly Leu Asp
291 145             150             155             160
294 Phe Lys Leu Tyr Trp Thr Asp Ser Gln Asn Lys Lys Glu Val Ile Ser
295             165             170             175
298 Ser Asp Asn Leu Gln Leu Pro Glu Leu Lys Gln Lys Ser Ser Asn Ser
299         180             185             190
302 Arg Lys Lys Arg Ser Thr Ser Ala Gly Pro Thr Val Pro Asp Arg Asp
303         195             200             205
306 Asn Asp Gly Ile Pro Asp Ser Leu Glu Val Glu Gly Tyr Thr Val Asp
307     210             215             220
310 Val Lys Asn Lys Arg Thr Phe Leu Ser Pro Trp Ile Ser Asn Ile His
311 225             230             235             240
314 Glu Lys Lys Gly Leu Thr Lys Tyr Lys Ser Ser Pro Glu Lys Trp Ser
315             245             250             255
318 Thr Ala Ser Asp Pro Tyr Ser Asp Phe Glu Lys Val Thr Gly Arg Ile
319         260             265             270
322 Asp Lys Asn Val Ser Pro Glu Ala Arg His Pro Leu Val Ala Ala Tyr
323         275             280             285
326 Pro Ile Val His Val Asp Met Glu Asn Ile Ile Leu Ser Lys Asn Glu
327     290             295             300
330 Asp Gln Ser Thr Gln Asn Thr Asp Ser Gln Thr Arg Thr Ile Ser Lys
331 305             310             315             320
334 Asn Thr Ser Thr Ser Arg Thr His Thr Ser Glu Val His Gly Asn Ala
335             325             330             335
338 Glu Val His Ala Ser Phe Phe Asp Ile Gly Gly Ser Val Ser Ala Gly
339         340             345             350
342 Phe Ser Asn Ser Asn Ser Ser Thr Val Ala Ile Asp His Ser Leu Ser
343         355             360             365
346 Leu Ala Gly Glu Arg Thr Trp Ala Glu Thr Met Gly Leu Asn Thr Ala
347     370             375             380
350 Asp Thr Ala Arg Leu Asn Ala Asn Ile Arg Tyr Val Asn Thr Gly Thr
351 385             390             395             400
354 Ala Pro Ile Tyr Asn Val Leu Pro Thr Thr Ser Leu Val Leu Gly Lys
355             405             410             415
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VERIFICATION SUMMARY   DATE: 12/16/2005
PATENT APPLICATION: **US/10/559,825**   TIME: 15:33:39

Input Set : **A:\Sequence Listing.txt**
Output Set: **N:\CRF4\12162005\J559825.raw**

L:19 M:270 C: Current Application Number differs, Replaced Current Application No
L:19 M:271 C: Current Filing Date differs, Replaced Current Filing Date